



# Establishment, Expansion, and Outcomes at a Student-Run Free Clinic Serving People Experiencing Homelessness

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## Abstract

The number of student-run free clinics (SRFCs), which offer free care to persons and communities with limited healthcare access, has increased nationwide in recent years. The University of Central Florida College of Medicine's Chapman Compassionate Care Clinic (CCCC), an SRFC, was founded in 2018 and provides skin and wound care to a growing number of people experiencing homelessness in downtown Orlando, Florida. In this paper, we briefly describe the founding and operation of CCCC. A chart review of all patients seen since the program's inception was performed, and descriptive statistics are detailed to characterize the patients, dermatologic conditions, and comorbidities encountered and to assess the potential impact of CCCC. This chart review showed diverse acute and chronic needs among CCCC's population and revealed that the clinic engaged patients who typically utilize other traditional sources of healthcare services at lower levels, potentially due to the clinic's strategic co-location of services. We describe the process of developing co-located services through partnerships with existing community organizations in an effort to limit barriers to healthcare.

## Introduction

The year 2022 marked the first increase in homelessness among Floridians in a decade, with a 52% increase due to increasing housing costs, few affordable housing options, and a high rate of eviction.<sup>1</sup> In 2023, homelessness rose another 34%, with an estimated 15,706 people experiencing homelessness (PEH) throughout the state every night.<sup>2</sup> Due to factors like inadequate self-care resources, limited healthcare access, inability to store medications, and comorbidities, PEH face an increased morbidity of dermatologic disease, including high rates of chronic wounds and skin infections.<sup>3-13</sup> Homelessness in southern latitudes compounds these challenges, with studies showing increased rates of severe sunburn and skin cancer.<sup>6,14,15</sup> The result is that an estimated one-third of medical visits by PEH are due to dermatologic concerns.<sup>16</sup>

Chapman Compassionate Care Clinic (CCCC) is a student-run free clinic (SRFC) founded in 2018 by three medical students from the University of Central Florida (UCF) College of Medicine who sought to serve the needs of Orlando's community experiencing homelessness by providing care for common skin afflictions and links to community resources. Staffed by student volunteers and overseen by supervising faculty, SRFCs provide healthcare at no cost to those who lack insurance or cannot afford care, aiming to enhance access to care. In its expansion, CCCC has adopted a model of co-located services, strategically aiming to address wide-ranging patient needs in one convenient location.

In this paper, we outline this clinic's founding, operations, and expansion as a model for SRFCs seeking to work with PEH. We also report on a chart review of CCCC's patient population from its first clinic in January 2019 until June 2022 to characterize the patient population's demographics, presenting conditions, and comorbidities. The process of co-location of services is described alongside

the potential implications of this model for healthcare accessibility.

## **Clinic Structure**

### *Clinic Founding*

During 2018, in response to the health burden associated with homelessness, three medical students at the UCF College of Medicine sought to establish a SRFC focused on meeting the health needs of PEH in Orlando, Florida. These students first secured school approval to form a student organization and subsequently appointed a faculty advisor, medical director, and medical student board for the clinic. These founding members then sought an ideal location to provide care and began emailing preexisting organizations throughout Orlando which offered support and services to PEH. While many organizations expressed concerns over legal overhead, the founding students eventually partnered with a faith-based organization to establish a clinic site located alongside this organization's preexisting meal services.

To inform the medical services provided, founders sought to assess healthcare needs and priorities at this location. A semi-structured interview protocol was developed through expert consultation and literature review and received institutional review board (IRB) approval. Interviews were voluntary and no compensation was provided. Between August and November 2018, 47 in-person interviews were conducted with PEH at meal services. The respondents displayed unmet healthcare needs including chronic illnesses, mental illness and substance abuse. These needs were often unmet, and many respondents had used the emergency department to receive care. Discussion with respondents revealed common dermatologic, psychiatric, and dental concerns with few resources for care.

The population's geographic instability and legal barriers regarding prescription medication distribution limited the capacity to provide chronic care, decreasing the potential impact of primary and psychiatric care; however, unmet, acute dermatologic needs suggested that the clinic's limited resources could provide the largest impact possible with a focus on skin and wound care. Over time, the clinic sought to meet a broader range of needs of its patient population, specifically by co-locating wide-ranging services in one convenient location. Through 'cold call' outreach to pre-existing community-oriented organizations and health profession schools, new partnerships have formed, expanding the clinic site's services to include vaccinations, sexual health testing and education, infectious care, mental health services, medication reconciliation, and primary care follow-up.

### *Governance Structure*

The founding members defined the clinic's goals and governance in a program proposal and mission statement. The CCCC has eight board positions consisting of 2nd-year medical students, including the two clinic managers, an electronic medical records chair, an inventory chair, a volunteer coordinator, a research/quality improvement coordinator, a clinic project manager, and a community project manager. Board members oversee the maintenance and expansion of the clinic and organizing all volunteer training and efforts on clinic dates. Each clinic is staffed by medical student volunteers who are recruited via email. Volunteering is not mandated for students and does not provide course credit.

A faculty advisor provides guidance on major clinic decisions and attends all clinics. Additional physician faculty and residents from UCF College of Medicine also frequently attend clinics. The UCF College of Medicine also supports the clinic's liability insurance covering physicians, residents, and medical students.

### *Clinic Layout*

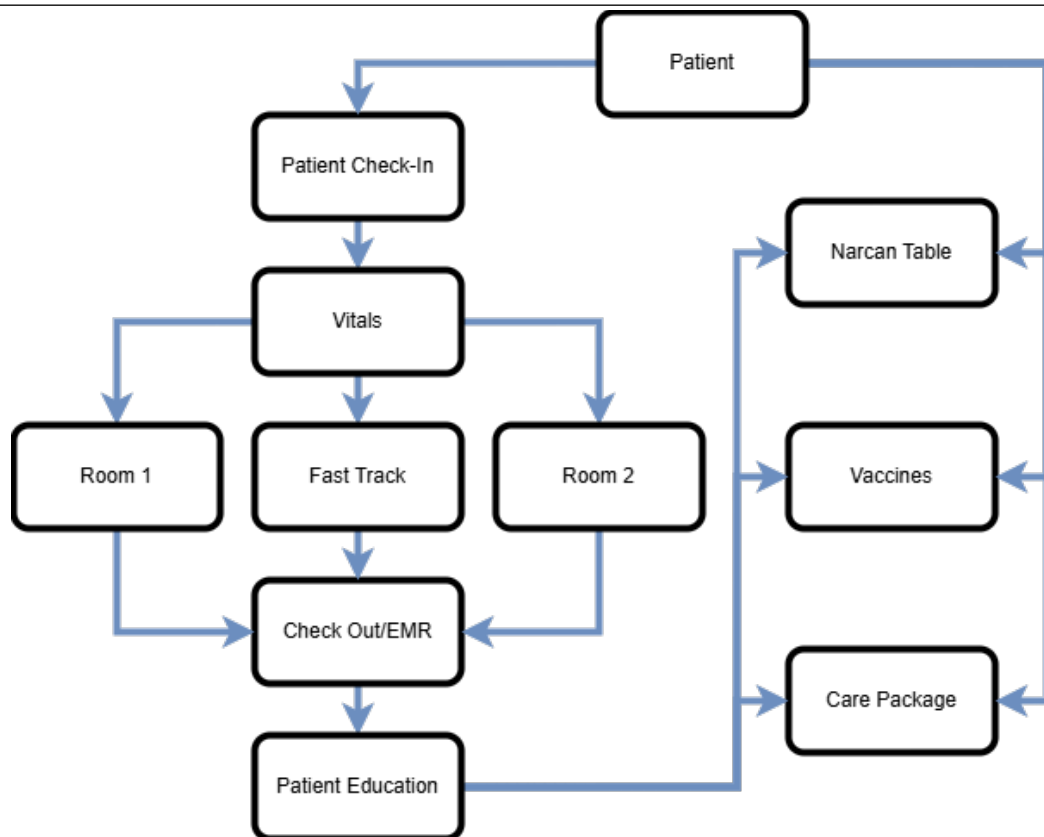
CCCC operates as a mobile model clinic, assembling a 2-room tent before each monthly clinic and dismantling it afterwards. The clinics begin at 5:00 pm, and patients are seen on a first-come, first-served basis for roughly 2.5 hours. A 'fast-track' area adjacent to the tents serves patients who do not

need a private setting for assessment. The clinic's partners are stationed alongside CCCC.

Upon arrival, patients provide information about their demographics and medical history and volunteers check their vitals. To reduce barriers to care, patients are not required to provide identification, fully complete check-in paperwork, or have vital signs assessed to receive care. After being directed to a clinic room or the fast-track station, patients are initially screened for mental health concerns and as needed, receive counseling from a student from a partnered behavioral health school. Next, the patient is seen by a team of 2 medical students and a pharmacy student, who obtain a focused history, review medications, and perform a physical examination. The team then presents this information and a proposed plan to the attending physician, who provides feedback and then joins the room to finalize a care plan. After receiving treatment, patients check out and are given discharge instructions and referrals (Figure 1).

CCCC is funded by a donation from the Jules B. Chapman, MD and Annie Lou Chapman Private Foundation, which aimed to promote humanism in medicine at the UCF College of Medicine. Supplies are purchased online by the Inventory Chair. The clinic provides free wound care services, including dressings, skin and wound care supplies, and over-the-counter treatments, including antimicrobial creams, antihistamine creams, hydrocortisone, lotions and non-steroidal anti-inflammatory drugs (NSAIDs). Patients who cannot receive appropriate treatment at CCCC are referred to a community partner providing primary care services to PEH, located within walking distance. Given limitations in clinic treatment options, patients who have emergent issues, including suicidality or severe hypertension, are referred to a local hospital to receive proper treatment. Additionally, CCCC distributes preventative care packages, including sunscreen, hand sanitizer, socks, hats, condoms and other

Figure 1. Patient flow



At the Chapman Compassionate Care Clinic, individuals are able to access vaccinations, care packages, and Narcan distribution regardless of their need for care. EMR: electronic medical record.

**Table 1.** Patient demographics and comorbidities

Variable	N = 305 (%)
Patient visits, n = 357	
Individual patients	305
Mean age in years ± standard deviation	48.7 ± 12.8
Gender, n = 289	
Male	222 (76.8)
Female	67 (23.2)
Race/Ethnicity, n = 275	
Black	144 (52.4)
White	88 (32.0)
Hispanic	23 (8.4)
Other	20 (7.2)
Veterans, n = 30	
Comorbidities, n = 305	
Hypertension	97 (31.8)
Diabetes	42 (13.8)
Asthma	35 (11.5)
Bipolar disorder	22 (7.2)
Chronic obstructive pulmonary disease	18 (5.9)
Hypercholesterolemia	15 (4.9)
Schizophrenia	14 (4.6)
Human immunodeficiency virus	11 (3.6)
Hepatitis C	7 (2.3)
Blood pressure at each visit, n = 357	
Systolic BP≥130 and/or Diastolic BP≥80	190 (53.2)
Systolic BP≥180 or Diastolic BP≥120	20 (5.6)
Systolic BP<130 and Diastolic BP<80	147 (41.2)
Living Condition, n = 307	
Unhoused	234 (76.2)
Temporary housing	41 (13.4)
Stable housing (rent, own)	32 (10.4)
Current Substance use, n = 374	
Smoking	194 (63.6)
Alcohol	117 (38.4)
One or more illegal drugs	63 (20.6)

Demographic and comorbidity data for Chapman Compassionate Care Clinic’s patient population from the first clinic date in January 2018 through June 2022. Responses and vital sign assessment were not required to receive care, so many patients left specific questions blank, leading to differing response rates. Gender, ethnicity, and comorbidities reflect statistics for individual patients, while blood pressure, substance use, and living condition were measured at each visit. Patients were able to select more than one substance and comorbidity, but were limited to selecting one ethnicity. BP: Blood Pressure.

essential products to individuals regardless of their need for treatment. Regular quality improvement projects help refine processes to enhance clinic impact and efficiency.

### Chart Review

Approval was obtained via the UCF IRB to perform a chart review of CCCC’s patient population.

Patient consent was not required to perform chart review as data was de-identified and cumulatively pooled prior to publication. All existing charts of CCCC patients were reviewed and de-identified data was subsequently evaluated for patient conditions, comorbidities, treatments, and demographics. A total of 357 medical visits between January 2018 to June 2022 across 305 patients were reviewed.

Patients ranged from 8 to 78 years old, with a mean age of 48.7 years. Regarding gender (n=289), 76.8% of these patients identified as male, and 23.2% identified as female. In terms of race (n=275), 52.4% of CCCC's patient population self-described as Black, 32.0% as White, 8.4% as Hispanic, and 7.3% as Other. (Table 1). Patients were unable to list more than one ethnicity, and as such, these categories do not account for individuals with multiple ethnicities. Being that responses were not required to receive care, several patients did not have documented ethnicities, genders, or housing status. A total of 305 patients were treated across 357 visits, meaning 52 visits treated returning patients. Of these follow-up patients, 34 patients were treated across 2 total visits, with 5 patients attending 3 or more visits to CCCC.

The most common comorbidities seen within CCCC's patient population included hypertension, diabetes, asthma, bipolar disorder, COPD, hypercholesterolemia, schizophrenia, human immunodeficiency virus (HIV), and hepatitis C. In terms of substance use (n=305), 63.6% of patients endorsed current tobacco use, 38.4% endorsed current alcohol use, and 20.6% endorsed the use of one or more illegal drugs (Table 1).

Evaluation of presenting conditions and treatments was limited by electronic medical record issues, with many early records improperly stored. Among the 175 diagnoses listed, the most prevalent etiology were infectious conditions, with fungal causes comprising 26.9% of total diagnoses, bacterial at 9.1%, and viral at 1.1%. The second most prevalent type of diagnosis was inflammatory conditions (20%), including conditions such as dermatitis, psoriasis, and sunburns. The third was wounds or traumatic injuries (19.4%). Insect bites (10.3%) were also commonly observed. Antifungal and antibiotic creams (43 and 42 units respectively) were the most frequently distributed over-the-counter treat-

**Table 2.** Patient diagnoses and treatments

Variable	N = 175 (%)
Diagnostic Class	
Fungal Infections	47 (26.9)
Inflammatory	35 (20.0)
Wounds and trauma	34 (19.4)
Insect bites	18 (10.3)
Miscellaneous	18 (10.3)
Bacterial Infections	16 (9.1)
Infestations	5 (2.9)
Viral Infections	2 (1.1)
Treatment, n = 163	
Antifungal cream	43 (26.4)
Antibiotic cream	42 (25.8)
Hydrocortisone	39 (23.9)
Lotion/moisturizer	17 (10.4)
Diphenhydramine	12 (7.4)
Acetaminophen/NSAIDs	10 (6.1)

*Presenting condition and treatment data for Chapman Compassionate Care Clinic's patient population from the first clinic date in January 2018 through June 2022. Documentation of diagnosis and treatment was incomplete at certain clinic dates, leading to limited numbers recorded.*

*NSAIDs: Non-Steroidal Anti-Inflammatory Drugs*

ments. Anti-inflammatory medications such as hydrocortisone (39), diphenhydramine (12), and NSAIDs/acetaminophen (10) were also commonly provided (Table 2).

## Discussion

Since its founding in 2018, Chapman Compassionate Care Clinic has seen a diverse range of patients for conditions which reflect the dermatologic risks of homelessness in the southern United States. These patients also possessed significant comorbidities, highlighting the importance of specialty SRFCs' integration with mental healthcare and primary care services. The clinic has adopted a model of co-location of services, seeking to meet as many needs as possible in one location, which may decrease barriers to care for the clinic's patient population.

### *Identification of Dermatologic Conditions and Comorbidities*

PEH face several risk factors for dermatologic disease.<sup>12</sup> In southern latitudes, these risks are compounded by elevated levels of sun exposure, insect exposure and extreme weather events.<sup>3-7,10,13</sup> Consequently, common conditions seen at CCCC include infections, inflammatory conditions, insect bites, and sunburns. These conditions underscore the significant dermatologic burden of homelessness and highlight the role SRFCs can play in addressing these acute needs. Skin concerns are estimated to account for 20% of emergency department visits amongst PEH.<sup>17</sup> Being that PEH have limited access to healthcare and self-care resources, SRFCs' management of acute conditions may help decrease healthcare costs, limit disease progression and prevent downstream health consequences.

Additionally, CCCC patients reported experiencing higher rates of comorbidities compared to national averages. For example, diabetes was reported by 13.8% of patients (versus 11.9% nationally), asthma by 11.5% (versus 7.7% nationally), HIV by 3.6% (versus 0.4% nationally) and schizophrenia in 4.6% (versus 0.25-0.64% nationally).<sup>18-22</sup> Similarly, increased proportions of CCCC patients report current tobacco and illicit drug use compared to national averages. These findings reflect the significant burden of chronic physical and mental illness seen amongst PEH.<sup>23-25</sup> While CCCC provides acute and preventative care, the relatively low number of follow-up visits and the wide range of prevalent comorbidities highlight the pressing need for longitudinal care to improve the health of PEH. Specialty SRFCs must work to integrate services with primary care and mental healthcare providers to comprehensively address the needs of their patients.

### *Distribution of Patient Demographics*

Across the nation, black people are overrepresented amongst PEH, due to factors including systemic racism, housing discrimination, and inequities in criminal justice policies.<sup>26, 27</sup> Additionally, males face a higher risk of homelessness, potentially due to increased levels of substance abuse, untreated mental health disorders, and criminalization.<sup>28-30</sup> These national trends are reflected in CCCC's patient population, with increased proportions of black and male patients. In fact, the clinic's patient population surpasses statewide disparities, with 52.4% of CCCC's patients being black (compared to 41.0% of PEH statewide) and 76.8% being male (compared to 63.7% of PEH statewide).<sup>1, 31, 32</sup> While factors including clinic geography contribute to the racial distribution of CCCC's population, the relative overrepresentation of Black and male patients at CCCC highlights potential factors of CCCC that may reduce barriers to receiving care for these groups.

### *Operationalization of Co-Location and Potential Implications*

To address the interlaced needs of PEH, CCCC has adopted a model of co-located services, providing a broad range of services in one central location.<sup>33-35</sup> In adopting this model, CCCC has formed strategic partnerships based upon the expressed and data-driven needs of its patients. To address high rates of mental health issues, CCCC partnered with a local behavioral health school to provide mental health and substance abuse screenings to all patients, as well as counseling when

indicated. In response to elevated rates of substance use, a partnership was formed with a local pharmacy school, which provides Narcan education and medication reviews at each clinic. For patients with conditions or comorbidities that cannot be appropriately addressed at CCCC, referrals are made to a local primary care clinic specializing in homeless healthcare, located within walking distance. Future efforts seek to evaluate the follow-up rates of these referrals.

Increased rates of infectious conditions prompted initiatives to expand vaccination and sexual health prevention efforts. During a 2019 Hepatitis A outbreak in Orange County, a partnership formed with a state-run program which now distributes vaccinations including Hepatitis, Meningococcal, Smallpox, flu, and Coronavirus disease 2019. Additionally, two partners provide testing, education and care for various infectious conditions, with one program focused on chronic infectious conditions and the other specializing in sexually transmitted infections. At clinic dates, all partners are present, providing comprehensive care in one central location.

Co-located services, provided after traditional work hours, aim to address barriers to care including competing responsibilities, time constraints, or transportation barriers. The increased representation of Black and male patients, who typically access healthcare less frequently than their racial and gender counterparts, may reflect the impact of this model in reducing barriers that typically prevent these groups from accessing care.<sup>36, 37</sup> CCCC's patient distribution may highlight a potential impact of this model in increasing healthcare accessibility and equity. Further research should focus on the impact of co-location on patient outcomes to more fully explore the impact of this model of care.

### *Limitations*

Limitations of this project include the incomplete characterization of various dermatologic conditions due to omissions in the medical records system early in CCCC's operations. As such, a complete characterization of presenting conditions is not available. Additionally, some patients declined to provide demographic and gender information or to complete vital sign assessment. Lastly, given the limited healthcare access amongst PEH, the listed comorbidities may not reflect a fully exhaustive account of patients' health conditions. Further investigation is needed to evaluate the impact of co-location of services on healthcare access and health outcomes for PEH.

## **Conclusion**

The CCCC SRFC treated 305 individual patients during its first four years of operation and continues to provide skin and wound care, highlighting the ongoing need for acute dermatologic care for PEH and the role student-run clinics can play in caring for vulnerable populations. The high proportion of chronic comorbidities seen in this population emphasizes the need to improve access to longitudinal care. Providing no-cost healthcare co-located with other important services can improve access to care, potentially by reducing barriers related to transportation costs, scheduling logistics, or competing responsibilities.

### **Disclosures**

The authors have no conflicts of interest to disclose.

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